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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/649,327      | 08/26/2003  | Paul A. Knight       | ISOT-017            | 4588             |

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EXAMINER

ZEC, FILIP

ART UNIT PAPER NUMBER

3744

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/649,327             | KNIGHT, PAUL A.     |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Filip Zec              | 3744                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                                |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/21/2005</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's arguments see pages 5-16, and the amendment, see pages 2-4, filed 5/16/2005, with respect to the rejection(s) of claim(s) 1, 10, 11 and 14 under 102(b) and with respect to claim(s) 2-9, 12-13 and 15-18 under 103(a) have been considered but are moot in view of the new ground(s) of rejection made in view of U.S. Patent 4,213,827 to Calderon

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 10 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,213,827 to Calderon. In FIG. 1, Calderon teaches a spray coolant reservoir system comprising a chassis (11), having a spray chamber (21), a spray unit (54) within said chamber for dispensing pressurized (19) coolant (55) upon an item (coke on the surface of 16, FIG. 1; col 7, lines 20-25) to be thermally managed, a coolant system (44) including a pump (19) having an intake port (dashed line from 19) and an output port (see FIG. 1), wherein said output port is fluidly connected to said spray unit (see FIG's 1, 5 and 6), wherein said intake port of said pump is fluidly connected to said spray chamber, a reservoir (18) fluidly connected to said output port of said pump, wherein said reservoir capable of storing a volume of coolant, a control system

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(gates 31 and flapper 32, FIG. 6) in communication with said coolant system and said reservoir for controlling a flow of coolant between said reservoir and said coolant system.

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable by U.S. Patent 4,213,827 to Calderon. Calderon discloses applicant's basic inventive concept, a spray coolant reservoir system and a method for operating said system, substantially as claimed with the exception of specifically stating that the reservoir is located external to said chassis. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Calderon, by locating the reservoir external to said chassis in order to improve the capacity of the reservoir by making it larger and no longer having the space constraints of the chassis.

6. Claims 2-7, 9, 15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,213,827 to Calderon in view of U.S. Patent 5,907,473 to Przilas et al. Calderon discloses applicant's basic inventive concept, a spray coolant reservoir system and a method for operating said system, substantially as claimed with the exception of specifically stating the use of a chamber port for a pressure equalization, fluidly connecting the spray chamber and the reservoir and the use of an intake valve, fluidly connected to the spray chamber

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and to the reservoir, and an output valve, fluidly connected to the spray unit and to the reservoir, where the valving system allows the coolant collected from the spray chamber to be entirely recycled, used jointly by the refrigerant from the reservoir or returned to the reservoir. Przilas teaches the use of sensors (47, FIG. 3B), valves and relays,..., to ensure the effective operation of the spraying system is independent of orientation due to gravity and/or externally applied "g" forces (col 6, lines 29-32). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Przilas to modify the system of Calderon, by adding an intake valve and an output valve in order to recirculate the coolant in the system or fill up the reservoir as needed. Przilas also teaches the use of a chamber port (24, FIG. 2) for pressure equalization, except that the port bypasses the reservoir and connects the spray chamber to the ambient air. Per claims 17 and 18, by having a chamber port (24, FIG. 2) open, the pressure in the system is controlled instantly and in a simpler manner than having two ports, one connecting the spray chamber to the reservoir, and another connecting the reservoir to the ambient air, as claimed by the applicant. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Przilas to modify the system of Calderon, by positioning the chamber port between the spray chamber and the reservoir in order to regulate the pressure relief when needed (col 4, lines 16-21).

7. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,213,827 to Calderon in view of U.S. Patent 4,857,090 to Hartness. Calderon discloses applicant's basic inventive concept, a spray coolant reservoir system, substantially as claimed with the exception of specifically stating the use of an intake valve, fluidly connected to a spray chamber and a reservoir, which controls whether the coolant stored in the reservoir is added to

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the coolant collected from the bottom of the spray chamber and returned to the spray unit.

Hartness shows an intake valve (52, FIG. 2), fluidly connected to a spray chamber (46) and a reservoir (48), which controls whether the coolant stored in the reservoir is added to the coolant collected from the bottom of the spray chamber (34) and returned to the spray unit (30) to be old in the refrigeration art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Hartness to modify the system of Calderon, by adding an intake valve in order to control whether the coolant stored in the reservoir is added to the coolant collected from the bottom of the spray chamber and returned to the spray unit, thus reusing the coolant and being more cost efficient.

8. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,213,827 to Calderon in view of U.S. Patent 5,907,473 to Przilas et al., as applied to claims 1 and 6 above, and further in view of U.S. Patent 4,476,687 to Conklin et al. Calderon in view of Przilas discloses applicant's basic inventive concept, a spray coolant reservoir system, substantially as claimed with the exception of specifically stating that the output valve diverts coolant output flow to a reservoir to fill said reservoir. Conklin shows an output valve diverting a coolant output flow back to a reservoir (col 4, lines 40-43) to be old in the refrigeration art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Conklin to modify the system of Calderon in view of Przilas, by adding an output valve in order to control the refill of the tank (col 4, lines 53-55).

9. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,213,827 to Calderon, in view of U.S. Patent 6,305,180 to Miller et al. Calderon discloses applicant's basic inventive concept, a spray coolant reservoir system, substantially as claimed

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with the exception of stating the use of a fill port, a drain port and a vent port in the reservoir. Miller shows a fill port, a drain port and a vent port (col 6, lines 52-56) in the reservoir (piping array P, FIG. 3), to be old in the refrigeration art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Miller to modify the system of Calderon, by adding a fill port to the reservoir in order to recharge the system with fresh coolant, a drain port to the reservoir in order to remove the old coolant when recharging and a vent port to the reservoir in order to manipulate the coolant pressure in the reservoir with respect to the ambient pressure.

### *Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is (571) 272-4815. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Filip Zec  
Examiner  
Art Unit 3744

  
**CHERYL TYLER**  
**SUPERVISORY PATENT EXAMINER**

FZ